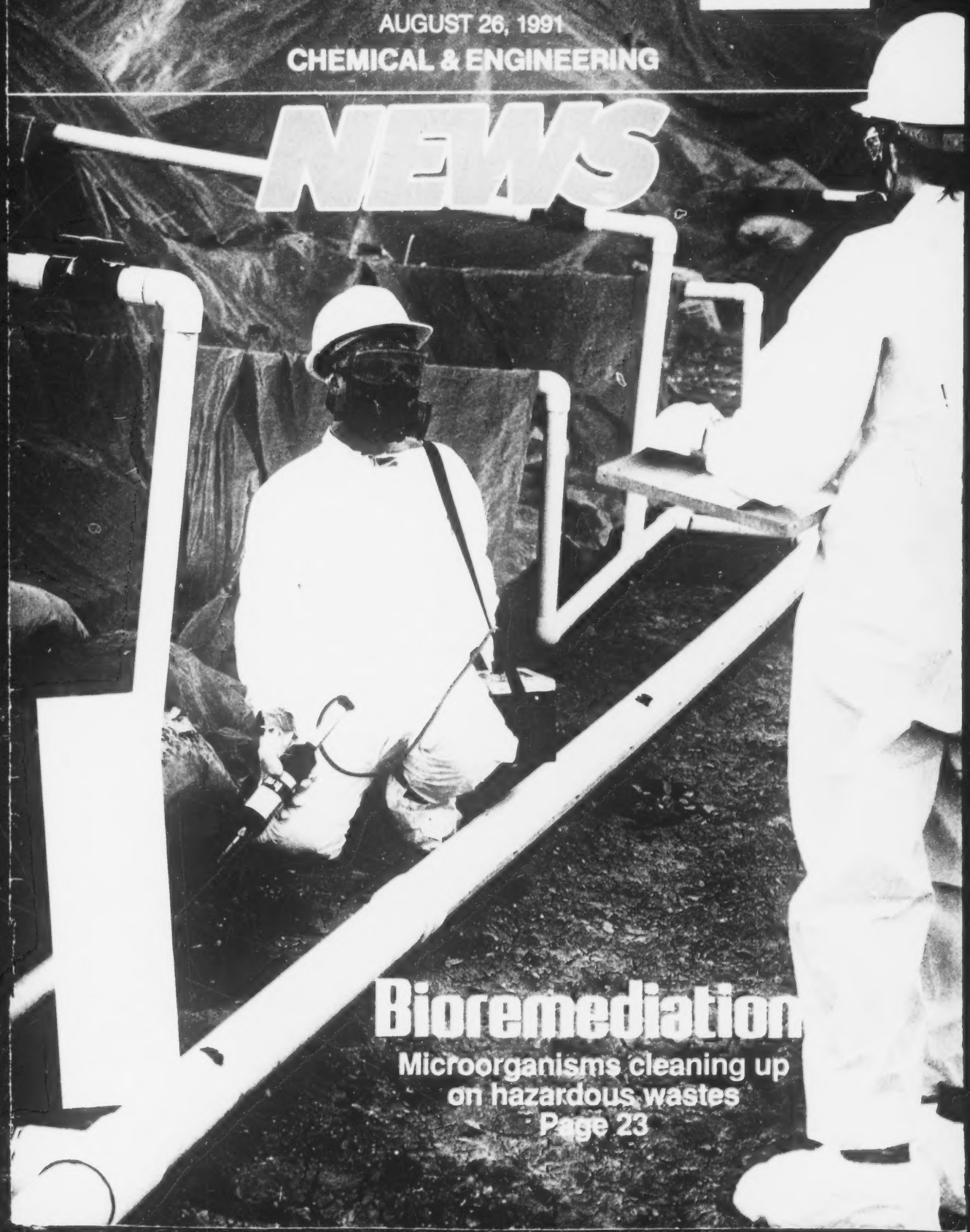
AUGUST 26, 1991
CHEMICAL & ENGINEERING

NEWS



Bioremediation

Microorganisms cleaning up on hazardous wastes

Page 23

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CHEMICAL & ENGINEERING NEWS

AUGUST 26, 1991

News of the Week

■ **Agreement signed requiring urban areas with excessive ozone and carbon monoxide pollution to start using oxygenated and reformulated gasoline.** Page 4

■ **Eastman Kodak is seeking an injunction to stop Cetus Corp. from selling its polymerase chain reaction technology to Hoffmann-LaRoche.** Page 5

■ **Chemical and rail industry groups step up efforts to tighten rules for transport of hazardous chemicals following recent tankcar spills in California.** Page 5

■ **U.S.-Soviet cooperation in space research takes another step forward with launching of Soviet meteorological spacecraft carrying U.S.-made ozone mapping spectrometer.** Page 6

Business

Chemical companies expand child care benefits for employees, find that these programs help boost productivity and morale. **Page 12**

Government

Municipalities are battling to avoid paying for landfill cleanup under Superfund, arguing that companies are responsible for most hazardous wastes at these sites. **Page 16**

Woman convicted of poisoning her infant son with ethylene glycol is suing doctors and others for wrongful diagnosis, contending they should have discovered the baby had a rare genetic disease. **Page 18**

Study of Soviet-developed heart drug, moricizine, has been stopped because more patients taking it died than those who were taking a placebo. **Page 19**

Science/Technology

Common molecular target of two immunosuppressive drugs has been discovered by collaborating research groups at Stanford and Harvard universities. **Page 21**

Awards

1992 winners of American Chemical Society's national awards have been announced. **Page 52**

Cover: Engineered treatment cells speed up above-ground bioremediation of contaminated soils and sludges at Groundwater Technology Inc. site

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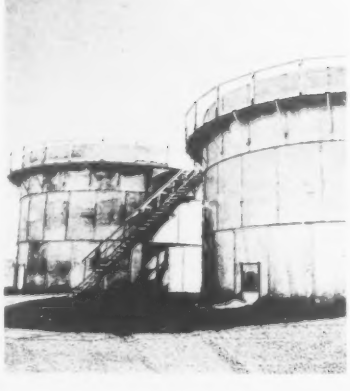

Product Report

Bioremediation—the microbial detoxification or degradation of wastes—is proving to be an innovative technology for cleaning up hazardous wastes. **Page 23**

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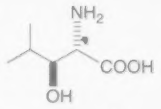
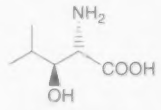
LETTERS

Racemic, scalemic, ambiscalemic

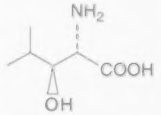
I concur with Takeshi Nakai (C&EN, July 1, page 2), who emphasizes the need for the facility to differentiate graphically between racemic and scalemic compounds. At the same time, however, I would like to remind Nakai that I published the graphic tools for precisely such a differentiation six years ago [*J. Chem. Educ.*, **62**, 114, (1985)].



(racemic)



(scalemic)



(ambiscalemic)

According to the proposal made in the cited article, three categories of compounds can be clearly delineated as shown by the examples. The term ambiscalemic is proposed as a descriptor for those scalemic substances with unknown absolute configurations.

Hubert Maehr
Roche Research Center
Nutley, N.J.

Starting with the practical

A letter from Rustum Roy attacking our huge expenditures on basic research (C&EN, May 6, page 6) was answered by Marco Ciufolini (C&EN, July 8, page 3), arguing that increased taxes will eventually pay back his research grants. Ciufolini might be effective in defending his own personal position, but I think he misses the main point of the Roy letter, which is that these types of funds could be spent even more efficiently in the future.

Before technological competition was so international, we Americans could afford to be the leaders in basic research. But now that the cumulative trade deficit threatens to make us an economic colony of Japan and Germany, some of us are beginning to realize that we will have to do better. Our consumer electronics and automobile industries are in serious trouble, and military power (and therefore freedom itself) seems dependent on similar technology. What worked in the past is no longer competitive.

The main point that I got out of the Roy letter could be paraphrased as, "Let the Japanese and Germans pay for the future C_{60}-type inventions. Let's read about them here in the U.S., and focus our efforts on efficiently mass producing them."

In order to actually implement this point, my own suggestion is to cut basic research funding by a large percentage. (Of course, this would require very unpleasant readjustments for many people, especially in the professorial ranks.) Spend some of the money on government-financed education for engineering and vocational students. If the education were free, better students (especially the well-rounded ones) would gravitate toward engineering instead of law, medicine, and business administration. We would then have more engineering-trained people ending up in management, as is now the case in both Japan and Germany.

Research that is paid for by the government must be more applied and less basic if we are going to survive as a world leader in anything other than Nobel Prize counts. Also, good teaching should be rewarded by government-paid bonuses. (In answer to the cry of, "Oh, but we can't judge good teaching," I say, take a poll of the top quarter of the students—the people who really want to learn can always tell you who the good teachers are.)

It is too bad that the letter from Roy started an argument in such emotional tones. However, monumental changes have to be made. Why not start with the practical things outlined above?

Daniel J. Shanefield
Distinguished Professor of Ceramic Engineering, Rutgers University

Keeping the word chemical

Apparently Ronald J. Gillespie's letter (C&EN, Dec. 10, 1990, page 4) produced several interesting responses dealing with the public's misunderstanding of the word chemical. I was glad to read in his most recent letter (C&EN, Aug. 5,

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Chemical Firms Offer Employees Expanded Child Care Programs

Du Pont, Dow, other firms are boosting so-called work and family benefits, find such programs pay off in increased productivity and morale

Susan J. Ainsworth, C&EN Houston

American business, chemical companies included, has long valued—or at least projected to esteem—honest employees and good family people. But until recently these corporations did little to nurture those values. They really didn't have to.

However, as the number of dual-income households grows and more women of childbearing age join the work force, corporate attitudes and policies are changing. At the center of these new "work and family" programs are expanding benefits that help their employees locate high-quality child care.

There is, of course, more than altruism at play. Besides the immeasurable public relations benefits, studies show that when companies help employees balance worker and parent responsibilities, turnover, absenteeism, and tardiness drop.

Moreover, experts report that these programs boost employee productivity and morale. "To be competitive, we must have a work force of people who find satisfaction in their total lives and who concentrate on the job. By helping employees meet some personal needs, we contribute to that concentration," says Jerry Fultz, employee relations manager at Phillips Petroleum.

Companies also hope that these programs will help them recruit top-notch employees now and in the future, when women and dual-career couples are expected to be an even larger percentage of the work force. "Demographic studies indicate that two thirds of the entrants into the work force between now and the year 2000 will be women, so I believe it's imperative that companies recognize this sort of aptitude, ability, and competence. Any company that continues to rely on white males as its primary source of management-track employees is going to have a very limited field to choose from in the future," says James L. Ketelsen, outgoing chairman and chief executive officer of Tenneco.

It's tough to say whether chemical companies as a whole are keeping pace with companies in all industries in providing child care benefits. Industry-specific data on this issue are hard to come by or are nonexistent. The chemical industry does tend to be "more conservative and cautious" compared with other industries when exploring new initiatives in family programs, notes Lynne Mischley, family issues coordinator for Dow Chemical.

Implementing these programs has "required development of our corporate culture," observes Susan Pierce, a consultant for work force partnering at Du Pont. Although Du Pont seems to be leading the chemical industry in its support and involvement in child care programs, "our old culture is still very much intact in some locations," she admits. "But it is changing quickly and we're working hard at it. I feel very good about it."

One child care option that chemical companies might be less likely to adopt than companies in other industries is on-site care. "We have a clear stance that we would not locate an on-site child care center within the gates of one of our plants," says Dow's Mischley. The way the chemical industry handles child care is slightly different from the way many other industries would handle it, "simply because it has a unique safety perspective," she points out.

But that does not now seem to be a major disadvantage, considering that relatively few U.S. corporations provide on-site child care centers anyway. According to a 1990 study done by benefits consulting firm Hewitt Associates, of Lincolnshire, Ill., 64% of the 837 employers it surveyed provide some type of child care benefit for their employees, but of those, only 9% provided or subsidized on-site or near-site child care centers.

At least some chemical companies have decided that an on-site center at one of their office complexes would not be a cost-effective or viable solu-

Companies offer spectrum of child care programs

Benefit	% of surveyed companies offering benefit
Dependent care spending accounts	89%
Resource and referral services	41
Child care centers	9
Employer-arranged discounts with local child care providers	4
Sick child care program	4
Voucher program	3
Financial support of outside child care facilities	3
Other (for example, direct subsidies, reimbursement for overtime)	2

Note: Figures are for 538 employers that provided some type of child care benefit for their employees in 1990. Total percentages exceed 100% because some employers offer multiple programs. **Source:** Hewitt Associates

Tenneco employees spend a few moments with their children at company-supported child care center

tion for their employees. Two years ago, for example, Air Products & Chemicals found that its Allentown, Pa., headquarters employees had 1400 children under the age of six. Trying to respond on a scale like that would be difficult, notes Pam Handwerk, manager for equal employment affairs and diversity programs at Air Products.

Meanwhile, other companies are not sure they'd have enough employee children to fill such centers. And fluctuations in this population of employee children would call to question a center's long-term utility. The associated costs and liability are also tough pills for corporations to swallow.

Although on-site child care centers seem to be in the minority of active corporate child care programs now, that is changing, at least within some industries. "There's been an incredible increase in the number of corporations providing on-site child care," notes Kaye Krebs, national marketing director for Kinder-Care at Work. She says the number of such centers has skyrocketed by 400% in the past three years. "We all realize that this is the child care solution of the future; it is where all major corporations are going."

A case in point is an on-site child care center currently being built as part of a $4.1 million, 40,000-sq-ft employee center at the Houston headquarters of Brown & Root, an engineering and construction firm that counts the chemical industry among its prized clientele.

Chemical companies eventually may warm up to the idea of on-site centers. But for now, some companies are addressing their employees' child care center demands—while being sheltered from excessive cost and liability—by supporting community near-site centers. For example, Dow and its sister company, Dow Corning, are working with representatives of Midland area employers and Bay City Public Schools to design a pilot, 24-hour child care center for the community, which is slated to open late this month. Dow Chemical's initial contribution to the center was $85,000; Dow Corning put in $50,000, with additional funding coming from other neighboring businesses.

Dow's Mischley says the center should help solve child care problems for shift workers who often have to work during hours when day care centers typically are closed. She says Dow's philosophy is to take a community approach to solving child care dilemmas; it tries to help nurture these programs by contributing leadership and supportive monies.

Corporate child care options, however, go beyond on-site or near-site centers. Dependent care spending accounts seem to be the most widely adopted program, possibly because this program requires little financial support from the corporation. This benefit option allows employees to put aside up to a federally set cap of $5000 per year of their pretaxable income to defray child care expenses. For most parents, this seems to be a realistic ceiling. Air Products, for example, learned from a survey of employees that the average annual cost of child care was $3700.

One of the drawbacks of this benefit is that employees are penalized for not exactly estimating the amount to put into the account. They lose what they don't use and they have to pay taxes on any amount they spend on child care beyond what they set aside in the account. Another disadvantage is that parents must dole out the money first and then be reimbursed. Dow began offering this benefit in 1987, but Mischley notes that it does not have a very high utilization rate; less than 4% of the company's employees at some locations take advantage of it.

To ease the employee cash flow problems with flexible spending accounts, some companies have adopted voucher programs, notes Carol Sladek, a consultant for Hewitt. Under these programs employees are issued coupons worth a certain amount of money for child care. "This is a new arrangement and I think we will see more companies adopting this program once companies have got the bugs worked out," says Sladek.

Another popular and fast growing benefit program that many companies are providing is access to resource and referral (R&R) services. Under these programs a corporation will typically contract with an outside service organization specializing in locating child care tailored to each employee's needs. These firms help employees locate convenient centers or help them advertise and interview for nannies, for example. At many companies, including Air Products, the service is 100% at the expense of the employer.

Many companies are adding sick child care programs to their roster of expanded services. They recognize that even employees with perfectly adequate day-care arrangements often get stuck when their kids get mildly sick. Many day-care centers will not accept sick children. In one move, a few years ago, Du Pont gave $40,000 to a group of day-care professionals to build Sniffles & Sneezes, a sick child care center that is open to the Wilmington community.

Another progressive benefit some companies offer is overnight/overtime dependent care. For example, Tenneco Gas has a plan that reimburses some employees for dependent care expenses resulting from overnight business travel or a company-required overtime assignment.

Companies are also becoming more generous with their family leave policies. Most companies provide fully paid time off for child birth, with the length of leave based on the physician's recommendation—usually six weeks. Dow's family leave policy allows employees up to 12 weeks of employment-protected, unpaid leave for parents of newborn or newly adopted children.

Just this month, Dow implemented a rare policy that provides a $3000 reimbursement to an employee to help defray the cost of legal adoption. Under the plan, an employee also may take up to four weeks of paid leave if there is no other parent in the home to act as the primary care giver. Some adoption agencies require that a new parent provide the initial care to the adopted child for a set period of time, notes Mischley. This time helps them do that or it can be used to travel to another country and pick up an adopted child, for example.

Air Products employee picks up daughter from child care at end of day

To help employees better juggle their family and on-the-job responsibilities, many companies are now offering flexible work arrangements. This flexibility can make it easier to care for children or to work out other personal needs. These arrangements might include part-time work, job-sharing, or telecommuting, where employees work from home or from satellite offices, often connected to the main office by computer. This type of flexibility is something chemical company employees—women and men—say they want. For example, a recent Du Pont survey of their employees at three sites across the country (70% were men) showed that 56% were interested in flexible work schedules, compared with 37% five years ago. In response, Du Pont has developed comprehensive, flexible work practice guidelines and is experimenting with many pilot programs.

But old habits die hard. While many chemical companies are adopting these work and family programs, they are not easily accepted corporatewide. "We've got top management support and grass-roots desire for these programs. The place where our organization requires the most development is in middle management," says Pierce. "Usually, once these managers are educated on how the issues impact their employees, most tend to come around." Communication and success of pilot programs will help sell the concepts, say companies.

Cost is an obvious drawback to offering these work and family programs. But Sladek notes that child care assistance can be relatively inexpensive compared with health care and retirement benefits, for example. "So employers get a larger bang for their buck."

Indeed, many companies with these benefits are starting to detect a favorable return on investment, according to Catalyst, a New York City-based women's research group, which recently did a study of flexible work arrangements. In interviews with more than 150 employees as well as their managers in diverse industries, Catalyst notes 68% of respondents said flexible work arrangements had affected retention positively. For 58% of respondents, flexible work arrangements have had a positive effect on recruitment or are projected to have a positive effect in the future. Almost two thirds reported that employees who utilize flexible work arrangements were more productive. And 70% of respondents reported that flexible work arrangements had a positive effect on morale.

Interestingly, these benefits programs will likely help companies recruit and retain both women and men. The Du Pont survey of 8500 of its employees, which polled the preferences of men, showed that 40% had considered another employer that offered more job flexibility, up from 25% three years ago.

"Clearly, we have a more productive work force," says Handwerk. She notes that Air Products' child care programs have probably made life easier for the 68% of its employees that reported difficulty in finding care. That means there has been less absenteeism and less time spent away from work looking for satisfactory child care resources, she reasons. "There's also a higher rate of satisfaction in terms of a parent knowing his or her child is in the right kind of care relative to what the employee wants."

"More and more, as the work force composition continues to change and new and different types of employees come into the chemical industry, more companies are going [to view providing work and family benefits] as a very critical bottom line business issue," says Handwerk. "To remain competitive, you've got to have high-quality products and services, but you've also got to have the human resources that are going to drive your corporation. And without these kinds of benefits programs, this kind of innovation, you're simply not going to be competitive." □